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Caution on "Short Cuts" for Lawns

Eliot C. Roberts
Iowa State University

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This article, the first in a series of three, will be of special interest if you're planning to build a new lawn. The following articles will deal more generally with caring for, maintaining and improving existing lawns.

by Eliot C. Roberts

A lawn should be a permanent part of your home landscape. Properly constructed, it shouldn't need yearly seeding or extensive renovation. A good lawn means different things to different people. But most agree that it should be uniform—from front to back and side to side—so that it's actually inconspicuous. That is, your home and plantings of ornamental shrubs and flowers should provide the focal points, while the lawn serves as a smooth, unblemished background. Blemishes caused by weeds, insects, diseases and irregular growth may often be traced directly to "short cuts" in lawn construction.

Iowa has some of the best and most fertile soils in the world. But variations in soil drainage, acidity and general fertility from place to place complicate the production of uniform quality lawn turf. If, in lawn construction, you don't create equally favorable soil conditions over the entire lawn, you can't expect a turf of uniform quality.

A well-established turf consists of several plants per square inch. Grass plants, however, respond individually, and it's only through a like response in all locations that you can realize a uniform turf. Thus, before starting a new lawn, it's important to be familiar with the essential ingredients for good construction.

Soil Conditions...

Since a turf provides a complete cover over the soil surface, it's difficult to modify soil conditions once the lawn is seeded. Soils under an established lawn may be cultivated or improved only to a very limited extent through aerification by the removal of plugs. So it's extremely important to work the soil and make necessary modifications before seeding.

Subsoil is the material below the topsoil that regulates the stability and drainage of your lawn. To effectively judge its condition, the subsoil should be exposed. You can do this conveniently before basement excavation begins in the construction of a new home. In some locations, deposits of topsoil may be 2-3 feet thick. In this case it isn't practical to move it to change subsoil conditions.

A stable subsoil is free of stumps, rubbish and other materials which will rot or rust. A heavy clay subsoil prevents the rapid removal of excess water, and this is undesirable. Installation of drainage tile is advised in these cases. The design of a suitable drainage system is often complex enough to warrant consultation with a drainage specialist. A gravel or sandy subsoil is ideal. Surface depressions and local wet and dry spots are signs of a poor subsoil under an established lawn.

Topsoil provides the growth medium for lawn turf. Save it by putting it in piles before excavation is started. Then carefully respread it after building is completed.

Lawn grasses adapted to Iowa conditions thrive under a wide variety of soil types. But it's important to make the best use possible of whatever soil is present. In starting a lawn, it's best to have 6-8 inches of good black topsoil. A sandy soil—containing a large percentage of coarse particles—requires more frequent watering because the water-holding capacity is low. A soil with a high content of clay and silt—containing a large percentage of fine particles—compacts easily because it has a high water-holding capacity. Either of these soil conditions result in a lawn turf that's difficult to maintain. A soil with properties midway between these extremes is desirable.

If your soil is too sandy, adding organic matter will help make it more suitable for turfgrass es-
establishment. About 2-3 cubic yards of cultivated peat per 1,000 square feet or 1-2 inches of peat moss spread over the area and mixed with the top 4 inches of soil will do. Bales of peat moss, containing 14-15 bushels of shredded material, will cover 100 square feet to a depth of 2 inches. Mineral additives, such as vermiculite, perlite and uncrushable or fired clay pellets used according to the manufacturer's specifications, also will help to improve sandy soil.

If your soil contains too much clay and silt so that it's very sticky when wet, adding organic materials and mineral soil conditioners can help. Adding 3-4 cubic yards of coarse, sharp sand per 1,000 square feet also is recommended.

Though unclipped grasses are of great value in improving poor soil conditions, clipped lawn grasses don't have as great an effect. So it's important to provide the most favorable soil conditions possible before seeding.

Lime may be needed on some soils to promote the best turfgrass establishment. The amount needed depends on soil acidity. Where needed, 50-100 pounds of ground limestone per 1,000 square feet usually is enough to bring the pH to 6.5. A soil test will help in making specific recommendations for lime.

Fertilizer is the source of plant food for turfgrasses. Most complete fertilizers have a three-number ratio printed on the container. These numbers tell the percentages of nitrogen (N), P₂O₅ and K₂O, respectively, in the fertilizer. Add adequate amounts of nitrogen and potassium to the seedbed, and apply them at regular intervals to the mature turf. Phosphorus is readily immobilized in the soil, and surface applications result in only limited penetration into the root zone. So it's important to mix ample phosphorus into the top 4-6 inches of soil before seeding. In addition to 10 pounds per 1,000 square feet of 10-20-10, 10-10-10 or 12-12-12 inorganic fertilizer, 20-30 pounds of superphosphate (20 percent grade) per 1,000 square feet is recommended if your soil tests low in phosphorus.

Many fertilizers on the market under various trade names can give good results if you follow the directions for rate of application. The use of slowly available organic fertilizers has particular value for lawn maintenance, but inorganic fertilizers are entirely satisfactory in lawn construction.

Grubproofing and sterilizing

your topsoil to kill soil insects and weed seeds may be desirable in some instances. As a rule, harmful soil insects and weeds may be effectively controlled in the established turf. The time required for chemical weed seed control before seeding often delays the seeding date to a point where poor turf establishment results. If grub populations in the soil are high, granular chlor dane at 5 pounds of 5-percent formulation or granular dieldrin at 1 1/2 pounds of 5-percent formulation per 1,000 square feet is advised. An equivalent amount of dust, wettable powder or emulsifiable concentrate is equally effective. Vapam, Mylon, methylbromide or calcium cyanamid, used according to the manufacturer's directions, may be useful in preparing a weed-free seedbed.

Lawn Seed Mixtures . . .

To provide good results, grasses used for seeding Iowa lawns must be adapted to this area. They must be reasonably tolerant of extremes in heat and cold, resistant to drought and persistent and vigorous at a reasonable cutting height, 1 1/2-3 inches.

The best presently available permanent grasses include: the blue grasses, common Kentucky, Merion and Park, standard sunny varieties for good soils; the fescues, common Creeping Red, Illinois and Pennlawn, for shade and poorer sandy soils; the colonial bent grasses, Astoria and Highland, for lawns of high quality that will receive intensive maintenance practices, including high levels of fertilization, watering and disease control. Also, the tall fescues, Alta and Kentucky 31, have a place for lawns on extremely poor soils that can't be modified, where a turf will receive rough wear and where a coarse turf isn't objectionable.

Other grasses—including Zoysias, Bermudas and so-called Mondo grass—are not considered permanent or desirable under average Iowa lawn conditions. They're either severely weakened by frequent clipping at lawn heights or lack adaptation to this area. The establishment and maintenance requirements are too exacting.

Small amounts of temporary nurse grasses may be included in a seed mixture to provide quick cover on banks or to protect the slower-growing permanent grasses from extreme conditions. Annual ryegrass is sometimes used for this purpose. Though preferences vary, we don't recommend clover in a lawn mixture. It colonizes in various parts of the lawn, creates conditions favorable for weed invasions and often isn't tolerant of hot, dry weather—all factors that result in a lack of turfgrass uniformity.

Seed mixtures are superior to pure seedings. The resulting turf is more hardy and easier to keep disease free. Bluegrass should predominate (50-75 percent) for average lawn conditions. If you want extra quality and are willing to fertilize with at least 6 pounds of nitrogen a season (60 pounds of 10-6-4 fertilizer or 120 pounds of a processed sewage sludge fertilizer per 1,000 square feet), Merion bluegrass may be substituted for the common Kentucky. Half Kentucky and half Merion bluegrass gives a good bluegrass balance for production of quality turf.

The rest of the mixture should consist of Creeping Red fescue, with perhaps a little domestic rye grass where you desire a quick cover. Don't include more than 5 percent Colonial bentgrass in these mixtures. Unless you want an extremely close-clipped, highly watered and fertilized turf, eliminate the bentgrass entirely.

If your soil is poor and conditions can't be modified, try a pure seeding of Alta or Kentucky 31 fescue. This grass must be clipped 2-3 inches high. Consider its use...
only where a better-quality turf can't be produced. Mixtures of predominantly bluegrasses should be seeded at 2-3 pounds per 1,000 square feet. Seed Kentucky 31 and tall fescues at 6-8 pounds per 1,000 square feet. For parts of a lawn in dense shade, seed the standard bluegrass mix part way under the shade and overseed the shaded area with straight Creeping Red fescue at 3 pounds per 1,000 square feet.

Twelve Steps . . .

Successful lawn construction means doing the right thing at the right time. Your finished turf will reflect the degree of care and planning you use. The result will depend on how well you modify the soil to make it more favorable and on the care with which you choose the seeding mixture. It will depend also on how well and how carefully you carry out each of the following twelve steps.

**Step 1:** Plan when to construct your lawn and stick to a time schedule. Late summer and early fall seedings produce the best results in Iowa for all seed mixtures except those containing 50 percent or more Merion bluegrass. This grass has extremely slow growth in the fall, but fills in more satisfactorily following spring seeding. Early spring is the second best time to seed a new lawn, but don't work the soil when it's sticky or wet.

Sometimes a new lawn must be started in late spring or early summer. At this time of year, you must keep the topsoil moist by frequent sprinkling. Adding extra organic matter to the soil before seeding, covering the seed with a little extra topsoil and protecting the seeding with a covering of ½-4 inch of clean hay or straw will serve to conserve moisture and encourage the seeding turf. If water is limited, do not seed your lawn in late spring or early summer.

**Step 2:** Measure your lawn area to determine its size. Additions of organic matter, sand, lime, fertilizers, pest-control chemicals and seed are all made at rates on the basis of 1,000 square feet. You won't be able to carry out most of the following step unless you know the size of your new lawn.

**Step 3:** For most Iowa soils, the standard recommendations outlined earlier for organic matter, lime and fertilizer should result in an attractive lawn. Where there's doubt that your soil falls into a suitable classification for lawn use, a soil test will aid in judging its texture, acidity and plant food requirements.

Recommendations based on soil tests are available from county extension offices, commercial concerns, landscape contractors and nurserymen. To get a soil sample, take several specimens—each from a depth of 3 inches—from scattered parts of the lawn. Take the samples before you make any treatments, combine them, mix well and save 1 cupful of the mixture for the soil test.

**Step 4:** Keep topsoil in a pile if building a new home. Spread it evenly over the lawn after a stable, well-drained subsoil has been established. The final grade or slope of the lawn should be such that good surface drainage is evident. Normally a fall of 1 foot in each 50 will keep excess water moving through the surface of the lawn turf. Too steep a slope may lead to erosion, difficulties in mowing and possible "scalloping" at the top or crown. Not more than a 1 foot drop in 3 is recommended.

Spreading topsoil and final grading
may be started at any time the soil is dry enough to be worked without sticking to implements or becoming compacted. Remove stones, roots and other material from the topsoil in this operation. The thickness of the topsoil should be uniform on slopes and in level areas alike.

**Step 5:** Organic matter, sand and other soil additives can be mixed with the topsoil with a small rotary garden tractor. Hand mixing is slow, hard work and seldom results in a uniform mixture. Even distribution of these materials in the top 4-6 inches of soil is most important.

**Step 6:** Ground limestone, complete fertilizer, additional superphosphate and any insecticides may all be spread on the soil at the same time.

**Step 7:** Rake ground limestone, complete fertilizer, superphosphate and insecticide into the top 4 inches of soil as the final grade and seedbed are prepared. After raking, roll the soil with a heavy roller, 200-300 pounds, to define humps and hollows in the new lawn. Rake the surface lightly to even off these irregularities and to prepare a loose seedbed of ¾-½ inch of soil.

**Step 8:** Sow the seed either by using a mechanical spreader or scattering it by hand. Either will be most uniform when the air is calm. Best results often are obtained by dividing the seedbed into several equal parts and setting apart a portion of the seed for each area. Seed half of the seed for each area in one direction and the other half a second time at right angles to the first.

**Step 9:** Rake in the seed lightly; be careful that the teeth just touch the soil surface. Too much pressure will cover the seeds too deeply or move some of them and leave bald spots in the new lawn. Cover the seed so that about 10 percent is still visible.

**Step 10:** Roll the area with a light (50-75 pounds) roller, such as a roller with most of the water ballast removed, to firm the soil around the seed.

**Step 11:** Frequent, light watering promotes seed germination and rapid establishment of the lawn. Don't allow the seedbed to dry or to become soaked or waterlogged. For light sprinkling, hand watering usually gives you better regulation of the amount of water than a mechanical sprinkler. As grass begins to grow, decrease the frequency of watering, but increase the amount of water each time. Normally a 2-month-old turf may be watered the same as an established lawn.

**Step 12:** Mow as soon as clippings can be removed at a cutting height of 1½-2 inches. Keep your mower sharp, or young plants will be injured. Until the new turf has filled in enough to hide sight of the soil, your mowing should be the only traffic on the turf. Supplies of fertilizer in the seedbed of spring-started lawns normally will last until fall; referertilize at that time. Fall-started lawns will need additional fertilizer the following spring.

**An Old Lawn?**

What about an old lawn that wasn’t constructed properly and constantly produces a poor-quality turf? The best answer is complete renovation as suggested by the recommendations and steps for starting a new lawn. Otherwise, areas with at least a 50-percent basic grass cover with no extremely weedy large areas may be improved by using chemical weed killers, followed by improved maintenance and care practices. A forthcoming article will offer suggestions on maintaining and improving existing lawns.